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that of a very elongated ellipse, in fact the most elongated nebular form that we have yet observed, it is not surprising that its angular velocity of rotation is the greatest that we have thus far observed in planetary nebulae.

W. W. CAMPBELL,
J. H. MOORE.

ON THE ROTATION OF THE NEBULA JONCKHEERE 320.

The small planetary announced by Jonckheere in March, 1916, number 320, has recently been tested for spectrographic evidence of rotation. The form of this nebula is shown in Dr. Curtis's drawing, and briefly described in his paper in this number.

Our spectrographic observations indicate that this nebula is rotating about an axis coinciding approximately with the shorter axis of the bright central oval, in the sense that a point on the major axis of the oval 3 seconds of arc south-east of the center, has a velocity of approach of about 10km/sec relative to that of the corresponding point northwest of the center. When the slit was placed along the major axis of the fainter outer ring, a slightly smaller rotational effect was observed for the brighter oval. The spectrum of the faint ring was not recorded.

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THE SPECTROSCOPIC BINARY η 4 CENTAURI.*

η Centauri, a helium star of Class B 5, was observed by the D. O. Mills Expedition at Santiago, Chile, in the years 1908 to 1911 and announced as a spectroscopic binary in the *Lick Observatory Bulletin* 6, 56, 1910. The 36 two-prism plates taken show twenty or more lines between 3900A and 5000A, of which eighteen are well identified and two probably are enhanced "metallic" lines. Only the four lines $\text{H}\gamma$ 4340A, He 4388A, He 4471A, Mg 4481A, were found uniformly sufficiently good for velocity measurement and these were weighted 1, 2, 4, 3, respectively. A period of 6.927 days best satisfying the observation was derived from a plotting of the observed velocities. The Lehmann-Filhé method and plani-

* *Lick Observatory Bulletin*.